

BREWSHEET v1.0 (2010-02-26)

Batch			BJCP Style Guideline			Efficiency	
Brew Name:	Pilsner Aristocrat		Style:	Bohemian Pilsner		Brewhouse Efficiency:	68%
Estimated OG:	1.050	Actual OG: 1.051	Code:	2B		Efficiency (on Batch Size):	69%
Estimated FG:	1.011	Actual FG: 1.014	OG:	1.044-1.056		Efficiency into Boiler:	91%
Estimated IBU:	36.1	Actual IBU: 35.0	FG:	1.013-1.017		Efficiency into Fermenter:	71%
Estimated SRM:	3.9	Actual SRM: 3.8	IBU:	35.0-45.0			
Brew Date:	03/20/10	Collected: 5.65	SRM:	3.5-6.0			
Rack Date:	04/08/10	Racked: 5.20	ABV:	4.2-5.4%			
Bottle Date:	04/30/10	Bottles: 52	CO2:	2.3-2.5			

Grain	Pounds	Potential	Color	% Bill
Pilsner (2-Row) Germany	10.50	1.037	2	95.45%
Carapils/Dextrine	0.50	1.033	2	4.55%

Hop	Alpha %	Ounces	Boil Time	IBU
Hersbrucker	2.5%	0.25	60	2.0
Hallertauer (US)	3.0%	0.50	60	4.7
Saaz (US)	4.3%	0.50	60	6.8
Spalt (GR)	2.6%	0.25	60	2.0
Tettnanger (US)	4.7%	0.50	60	7.4
Hersbrucker	2.5%	0.25	15	1.0
Hallertauer (US)	3.0%	0.50	15	2.3
Saaz (US)	4.3%	0.50	15	3.4
Spalt (GR)	2.6%	0.25	15	1.0
Tettnanger (US)	4.7%	0.50	15	3.7
Hersbrucker	2.5%	0.25	2	0.2
Hallertauer (US)	3.0%	0.50	2	0.4
Saaz (US)	4.3%	0.50	2	0.6
Spalt (GR)	2.6%	0.25	2	0.2
Tettnanger (US)	4.7%	0.50	2	0.6

Yeast Strain	
Yeast Strain:	White Labs WLP802
Type:	Pilsner Lager
Attenuation:	75-80%
Fermentation Temp:	50-55F
Flocculation:	medium

Yeast Required	
Cell Count (billions):	193
Vials (White Labs/Wyeast):	1.6
Dry Yeast (g):	10
Starter Volume (mL):	2000
DME Required (oz):	7.00
Vials Required (w/ Starter):	1.1

User Variables	
Calories per Pint:	168
12 oz. Bottles Required:	54.4
DME for Carbonation (oz.):	5.71
Estimated Preboil SG:	1.046
Actual Attenuation (%):	72.35%
Bottle Top Code:	P

Gravity		Collections	
Potential OG:	1.074	First Runnings (gal):	3.75
OG:	1.050	SG of First Runnings:	1.054
OG Temperature (F):	64	SG Temperature (F):	129
Corrected OG:	1.051	Corrected SG:	1.067
SG at Racking:	1.014	Second Runnings (gal):	4.80
SG Temperature (F):	62	SG of Second Runnings:	1.013
Corrected SG:	1.014	SG Temperature (F):	142
FG:	1.013	Corrected SG:	1.029
FG Temperature (F):	68	Preboil Volume (gal):	8.55
Corrected FG:	1.014	SG of Preboil Volume:	1.025
Potential ABV:	6.6%	SG Temperature (F):	147
Actual ABV:	4.8%	Corrected SG:	1.043

Brewing			
Batch Size (gal):	5.50	Desired Sparge Temperature (F):	168
Total Grain Weight (lbs):	11.00	Sparge Water (gal):	4.74
Grain Temperature (F):	69	Sparge Water Temperature (F):	177
Mash Ratio (qts/lb):	1.25	Estimated Preboil Volume (gal):	8.07
Mash/Lauter Deadspace (gal):	0.25	Boil Time (min):	90
Total Water Needed (gal):	9.70	Evaporation Rate (%):	13%
Desired Mash Temperature (F):	152	Estimated Evaporation Loss (gal):	1.57
Strike Water (gal):	3.44	Trub Loss (gal):	1.00
Strike Temperature (F):	173	Volume Left in Kettle (gal):	0.00
Grain Absorption (gal):	1.38	Actual Evaporation Rate (%):	15%
Mash-out Temperature (F):	152	Actual Evaporation Loss (gal):	1.90
Mash-out Water (gal):	1.52		
Estimated First Runnings (gal):	3.33		

Carbonation	
CO2 Volume:	2.40
Bottling Temperature (F):	63
Priming Sugar (oz):	4.08
Forced Carbonation (lbs):	23.3

Inventory	
Bottles Remaining:	45
Gallons Remaining:	4.22
Date Checked:	05/12/10

Diacetyl Rest	
Target Fermentation Completion:	75%
Target SG for Diacetyl Rest:	1.021

BREW DAY

Single Infusion Mash (with Mash-out) and Batch Sparge Brew Schedule	
Heat 3.44 gallons of mash water to 173F	
Add grain and mash at 152F for 60 minutes	
At T-40 to mash-out, heat 1.52 gallons of mash-out water on the stove to 210F	
At T-25 to mash-out, heat 4.74 gallons of sparge water in the kettle to 177F	
Mash-out with 1.52 gallons, mix and hold for 10 minutes	
Vorlauf and collect first runnings (approx. 3.33 gallons)	
Add 4.74 gallons to lautur tun, mix, hold for 10 minutes, and sparge	
Vorlauf and collect second runnings (approx. 4.74 gallons)	
Boil for a total of 90 minutes with the following hop schedule:	
0.25 oz. Hersbrucker	@60 minute(s)
0.5 oz. Hallertauer (US)	@60 minute(s)
0.5 oz. Saaz (US)	@60 minute(s)
0.25 oz. Spalt (GR)	@60 minute(s)
0.5 oz. Tettnanger (US)	@60 minute(s)
0.25 oz. Hersbrucker	@15 minute(s)
0.5 oz. Hallertauer (US)	@15 minute(s)
0.5 oz. Saaz (US)	@15 minute(s)
0.25 oz. Spalt (GR)	@15 minute(s)
0.5 oz. Tettnanger (US)	@15 minute(s)
0.25 oz. Hersbrucker	@2 minute(s)
0.5 oz. Hallertauer (US)	@2 minute(s)
0.5 oz. Saaz (US)	@2 minute(s)
0.25 oz. Spalt (GR)	@2 minute(s)
0.5 oz. Tettnanger (US)	@2 minute(s)

Notes	
Dry hop with half of 2 min. addition (1 oz total).	
Mash-out temp was 164F; need to rework formula a bit.	
Stirred a bit less at mash-in and mash-out to see how it affects efficiency.	
Let foam die down a bit before pitching starter.	
Diacetyl rest when SG is 1.023.	
1.033 SG on 3/24 (4 days after brewing); 18 points down, 12 to go.	
1.025 SG on 3/26 (6 days after brewing); 26 points down, 4 to go.	
3/26: 1.027 SG at diacetyl rest (had to go out of town).	
1.017 SG on 3/29 (9 days after brewing); 34 points down.	
3/31: Dry hopped with 0.25 oz of each noble (1.25 oz total).	
4/8: racked to bb for lagering 4 weeks.	
Flavor is close to SANP; aroma is also close, but not quite as strong so far.	
Next time, maybe use twice as much dry hops.	
Hardly any diacetyl presence at all.	
Overall a nice Pilsner. I might dry hop more aggressively next time.	